

REMARKS

In response to the objections to the specification and the Abstract of the Disclosure as set forth in paragraphs 11 through 21 of the Office Action, Applicants have revised the Abstract and attached the revised version hereto, on a separate page as required. In addition, Applicants have amended the Title of the Invention in the manner suggested by the Examiner, and have also revised the specification in the manner suggested by the Examiner in paragraphs 14 through 20. Accordingly, reconsideration and withdrawal of these grounds of objection is respectfully requested.

In response to the Examiner's comments in paragraph 10 of the Office Action regarding the Information Disclosure Statement submitted February 22, 2005, Applicants confirm that the indication on PTO Form 1449 that it constitutes "Sheet 1 of 2" was a typographic error. There was no second page of this form. Applicants note in this regard, however, that the initialed Form PTO-1449 which was returned with the Office Action contains no initialing to indicate that reference AC, an English-language document a copy of which was submitted with the IDS, was considered. Applicants further note in this regard that the designation "WO 99/39279" referred to in the Information Disclosure Statement is the International Publication Number. The International Application Number for this document is PCT/GB99/00128. In all events, a copy having been submitted with the Information Disclosure Statement, Applicants believe that

they are entitled to have this document considered of record, and respectfully request that the Examiner provide a further copy of the PTO Form 1449, indicating that this has been done.

In response to the rejection of Claim 4 under 35 U.S.C. §112, second paragraph, Applicants have corrected the numbering of that claim, and have amended the claim language so as to eliminate the phrase "such as". Accordingly, reconsideration and withdrawal of this ground of rejection is respectfully requested.

Claim 7 has been rejected under 35 U.S.C. § 101, as being drawn to non-statutory subject matter, as discussed in the Office Action at paragraphs 26-30. In response to this ground of rejection, Applicants have amended Claim 7 to define "a computer readable medium encoded with a program" for ranking the creators of a set of documents by performing the steps which implement the method according to Claim 1. Accordingly, Applicants respectfully submit that, as amended, Claim 7 is directed to an article (a computer readable medium encoded with a computer program), and now recites statutory subject matter.

Claims 1 and 4-9 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Yimam, "*Expert Finding Systems for Organizations...etc.*" (hereinafter referred to as Yimam) in view of Liddy et al (U.S. Patent No. 5,963,940). In addition, Claims 2 and 3 have been rejected over the same two

references, and further in view of Paik et al, "*Applying Natural Language Processing...etc.*". However, for the reasons set forth hereinafter, Applicants respectfully submit that all claims of record in this application distinguish over the cited references, whether considered separately or in combination.

The present invention is directed to a method for ranking expert individuals in respect of their degree of knowledge in a particular subject matter, based on a linguistic analysis of documents that they have created, which refer to that subject matter. As acknowledged in the introduction of the specification at pages 2 and 3, Expert Finding Systems have heretofore been proposed which employ a statistical analysis of e-mail messages for this purpose. However, such prior art systems suffered from several disadvantages. For example, counting keywords, which is one method used, is not an adequate indicator of expertise. In such systems, without an understanding of the semantic meanings of keywords, it is possible to assume that different words represent the same concept and vice versa, thereby triggering the retrieval of non-relevant information. Moreover, it is difficult to distinguish questions from answers, so that the two are given equal weighting, although a questioner may have no expertise in the field at all, leading to confusion. The invention was devised in order to provide a different method for creating user profiles and expert rankings, providing more meaningful user profiles. It is based on an analysis of the linguistic structure of selected extracts from a set of documents.

In particular, the linguistic structure of the extracts are analyzed by i) isolating verbs in the extracts to create a set of verbs for classification; ii) classifying each isolated verb according to a predetermined hierarchy; and iii) ranking the creators of the documents based on the analysis. It has been determined that, in accordance with the invention, this technique provides a far more accurate and realistic method for assessing the expertise of an individual than does a simple statistical analysis, for example. This is explained in greater detail on page 4, line 15 through page 5, line 8, and at page 8, lines 3-31. As stated at page 8, lines 23-27, the decision concerning the level of user expertise is made according to defined hierarchies of the verbs initially provided by Speech Act Theory (SAT). The latter provides the categories of illocutionary verbs (*i.e.*, assertive, commissive, directive, declarative, and expressive).

The Office Action acknowledges in paragraph 34 that Claim 1 is distinguished over Yimam in that the latter does not disclose analyzing the linguistic structure of extracts by isolating verbs in the extracts to create a set of verbs for classification, and classifying each isolated verb in the set of verbs according to a predetermined hierarchy. The Office Action further states, however, that Liddy et al discloses a natural language processing (NLP) technique that processes a subset of documents and analyzes the linguistic structure of the documents. Accordingly, the Office Action states that it would have been obvious to a person skilled in the art to modify the method of Yimam

to include these features, because the disclosure of Yimam suggests the need for a technique to extract and analyze documents.

In response to these observations, Applicants respectfully submit that nothing contained in either Yimam or Liddy et al teaches or suggests a combination of the two methodologies in a manner which would replicate the present invention.

In particular, Yimam investigates expert finding in depth, reviews and analyzes the existing systems in this domain, and suggests a domain model that can serve as a basis for design and development decisions. Nothing contained in Yimam, however, indicates that the method proposed is defective or in need of further development. Indeed, the approach in Yimam described on page 11 and beyond is represented as an improvement over the systems previously described.

The Office Action refers in this regard specifically to page 13, section 3, lines 2-4, and states that Yimam describes expert finding to include the ability to interpret concept to document relations. However, Applicants note that a more complete reading of the introductory two paragraphs in section 3 of Yimam demonstrates that the latter characterization is not apt. Indeed, Yimam states emphatically that his concern is more how documents “relate to the expert” than “how they relate to the concepts they contain”. At the concluding lines of paragraph 2, section 3, Yimam states the need “to determine how a document

relates to an expert before we go on extracting terms from it". The document continues on page 14, describing the system that was arrived at by Yimam, which is based on the DEMOIR server, and is shown in Figure 2 "to determine how a document relates to an expert before we go on extracting terms from it". Thus, Yimam actually teaches away from the use of other techniques, such as the natural language processing (NLP) techniques disclosed by Liddy et al.

Accordingly, for the reasons set forth hereinabove, Applicants respectfully submit that neither Yimam nor Liddy et al, nor the combination of the two teaches or suggests the invention as defined in Claim 1, in which a linguistic analysis is used as a basis for classifying verbs contained in extracts according to a predetermined hierarchy, with such analysis being used to rank the creators in terms of their expertise.

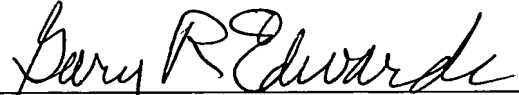
In light of the foregoing remarks, this application should be in condition for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and

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please charge any deficiency in fees or credit any overpayments to Deposit
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Respectfully submitted,



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